

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-13 (canceled).

14. (New) A method for operating a hydraulic actuator for a gas-exchange valve of an internal combustion engine, comprising:

selectively connecting and disconnecting, with the aid of a valve device, a working chamber of the actuator and a fluid reservoir, wherein a hydraulic fluid is stored under pressure the fluid reservoir, and wherein a lift of the actuating element of the actuator is dependent on a fluid volume present in the working chamber; and

ascertaining an instantaneous operating performance of the actuator by: a) briefly connecting the working chamber to the fluid reservoir; b) recording a corresponding pressure drop in the fluid reservoir; c) determining a corresponding lift from the pressure drop in the fluid reservoir, with the aid of predetermined geometric variables of the actuator; and d) forming at least one value pair that includes the lift of the actuating element and an open duration time period during which the working chamber of the actuator is connected to the fluid reservoir.

15. (New) The method as recited in Claim 14, wherein the pressure drop in the fluid reservoir is recorded for a plurality of open duration time periods during which the working chamber of the actuator is connected to the fluid reservoir, a plurality of value pairs corresponding to the plurality of open duration time periods being formed, and wherein an instantaneous characteristic curve is formed from the plurality of value pairs.

16. (New) The method as recited in Claim 14, further comprising:

causing the actuating element to shift from a predetermined initial position to a predetermined limit position, and recording a corresponding reference pressure drop in the fluid reservoir; and

standardizing the at least one value pair with the aid of the recorded reference pressure drop and a lift between the initial position and the limit position.

17. (New) The method as recited in Claim 16, wherein reaching of at least one of the predetermined initial position and the predetermined limit position of the actuating element is detected with the aid of a knock sensor.

18. (New) The method as recited in Claim 14, wherein the at least one value pair is formed taking into consideration at least one of elasticity of the hydraulic fluid and elasticity of the fluid reservoir.

19. (New) The method as recited in Claim 14, further comprising:

recording at least one of temperature and viscosity of the hydraulic fluid while determining the instantaneous operating performance of the actuator, wherein the at least one value pair is formed for the at least one of temperature and viscosity of the hydraulic fluid.

20. (New) The method as recited in Claim 14, further comprising:

determining a response time of the valve device from an onset of the pressure drop in the fluid reservoir.

21. (New) The method as recited in Claim 14, wherein, to ascertain the instantaneous operating performance of the hydraulic actuator, at least one of: a) the fluid reservoir is fluidly separated from a pressure reservoir; and b) a high-pressure pump for the supply of the fluid reservoir is shut off.

22. (New) The method as recited in Claim 14, wherein the instantaneous operating performance of the actuator is determined at least one of: a) after the internal combustion engine has been shut off; and b) during an overrun operation of the internal combustion engine.

23. (New) The method as recited in Claim 14, wherein the pressure in the fluid reservoir is detected when the hydraulic actuator is at rest, and wherein a signal is output if an impermissible pressure drop is detected.

24. (New) A computer-readable storage medium storing a plurality of computer-executable codes for controlling, when executed by a computer, a method for operating a hydraulic actuator for a gas-exchange valve of an internal combustion engine, the method comprising:

selectively connecting and disconnecting, with the aid of a valve device, a working chamber of the actuator and a fluid reservoir, wherein a hydraulic fluid is stored under pressure the fluid reservoir, and wherein a lift of the actuating element of the actuator is dependent on a fluid volume present in the working chamber; and

ascertaining an instantaneous operating performance of the actuator by: a) briefly connecting the working chamber to the fluid reservoir; b) recording a corresponding pressure drop in the fluid reservoir; c) determining a corresponding lift from the pressure drop in the fluid reservoir, with the aid of predetermined geometric variables of the actuator; and d) forming at least one value pair that includes the lift of the actuating element and an opening duration during which the working chamber of the actuator is connected to the fluid reservoir.

25. (New) A control device for a hydraulic actuator for a gas-exchange valve of an internal combustion engine, comprising:

a control unit for controlling:

selectively connecting and disconnecting, with the aid of a valve device, a working chamber of the actuator and a fluid reservoir, wherein a hydraulic fluid is stored under pressure the fluid reservoir, and wherein a lift of the actuating element of the actuator is dependent on a fluid volume present in the working chamber; and

ascertaining an instantaneous operating performance of the actuator by: a) briefly connecting the working chamber to the fluid reservoir; b) recording a corresponding pressure drop in the fluid reservoir; c) determining a corresponding lift from the pressure drop in the fluid reservoir, with the aid of predetermined geometric variables of the actuator; and d) forming at least one value pair that includes the lift of the actuating element and an opening duration during which the working chamber of the actuator is connected to the fluid reservoir.